

CONTAINS NO CBI



Form Approved
OMB No. 2010-0019
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90-890000 557

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Comprehensive Assessment Information Rule
REPORTING FORM

89 JUL 26 PM 3:14
OFFICE OF TOXIC SUBSTANCES
EPA

When completed, send this form to:

Document Processing Center
Office of Toxic Substances, TS-790
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460
Attention: CAIR Reporting Office

For Agency Use Only:

Date of Receipt: _____

Document
Control Number: _____

Docket Number: _____

PART A GENERAL REPORTING INFORMATION

☐ a. If a Chemical Abstracts Service Number (CAS No.) is provided in the Federal Register, list the CAS No. [0][2][6][4][7][1]-[6][2]-[5]

(i) Chemical name as listed in the rule *N/A*

(ii) Name of mixture as listed in the rule *N/A*

(iii) Trade name as listed in the rule *N/A*

Name of category as listed in the rule *N/A*

CAS No. of chemical substance [][]-[][]-[][]

Name of chemical substance

CBI Manufacturer 1

[] Importer 2

Processor 3

X/P manufacturer reporting for customer who is a processor 4

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X/P processor reporting for customer who is a processor ..... 5
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3

1.03 Does the substance you are reporting on have an "x/p" designation associated with it in the above-listed Federal Register Notice?

CBI

☒ Yes ☐ Go to question 1.04

☐ No ☐ Go to question 1.05

1.04 a. Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.

CBI

☐ Yes 1

☒ No 2

b. Check the appropriate box below:

☐ You have chosen to notify your customers of their reporting obligations

Provide the trade name(s)

☐ You have chosen to report for your customers

☐ You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting.

1.05 If you buy a trade name product and are reporting because you were notified of your reporting requirements by your trade name supplier, provide that trade name.

CBI

☐ Trade name VORANATE 3071

☐ Is the trade name product a mixture? Circle the appropriate response.

Yes 1

☒ No 2

1.06 Certification -- The person who is responsible for the completion of this form must sign the certification statement below:

CBI

☐ "I hereby certify that, to the best of my knowledge and belief, all information entered on this form is complete and accurate."

MARTY SCHUMPERT
NAME

[Signature]
SIGNATURE

7-6-89
DATE SIGNED

ENVIRONMENTAL SERVICES (803) 266 - 7423
TITLE TELEPHONE NO.

☐ Mark (X) this box if you attach a continuation sheet.

- 1.07 Exemptions From Reporting -- If you have provided EPA or another Federal agency with the required information on a CAIR Reporting Form for the listed substance within the past 3 years, and this information is current, accurate, and complete for the time period specified in the rule, then sign the certification below. You are required to complete section 1 of this CAIR form and provide any information now required but not previously submitted. Provide a copy of any previous submissions along with your Section 1 submission.

"I hereby certify that, to the best of my knowledge and belief, all required information which I have not included in this CAIR Reporting Form has been submitted to EPA within the past 3 years and is current, accurate, and complete for the time period specified in the rule."

NAME	SIGNATURE	DATE SIGNED
TITLE	() TELEPHONE NO.	DATE OF PREVIOUS SUBMISSION

- 1.08 CBI Certification -- If you have asserted any CBI claims in this report you must certify that the following statements truthfully and accurately apply to all of those confidentiality claims which you have asserted.

"My company has taken measures to protect the confidentiality of the information, and it will continue to take these measures; the information is not, and has not been, reasonably ascertainable by other persons (other than government bodies) by using legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding) without my company's consent; the information is not publicly available elsewhere; and disclosure of the information would cause substantial harm to my company's competitive position."

NAME	SIGNATURE	DATE SIGNED
TITLE	() TELEPHONE NO.	

[] Mark (X) this box if you attach a continuation sheet.

1.09 Facility Identification

City

[5][C] [2][9][8][5][3]--[][][][]

State Zip

Dun & Bradstreet Number[0][0]-[5][2][8]-[5][6][8][9]

EPA ID Number[5][2][0][0][4][7][5][6][3]614

Employer ID Number[4][2][0][4][0][1][7][8]5

Primary Standard Industrial Classification (SIC) Code[3][6][3][2]

Other SIC Code[][][][]

Other SIC Code[][][][]

CBI Name MAYTAG CORPORA TION
Address 403 WESLEY ST NORFOLK
Street

NEWTON _____
City

[7][A] [5][0][2][0][8]--[][][][]
State Zip

Dun & Bradstreet Number[0][0]-[5][2][8]-[5][6][8][9]

Employer ID Number[][][][][][][][][][]

6

(SEE 1.10)

[illegible]

City

 --

State Zip

Dun & Bradstreet Number[][]-[][][]-[][][][]

CBI Name [J][E][S][S][E][][M][A][R][T][I][N][][S][C][H][U][M][P][E][R][T][][][][]

Address 00130K 68 Street

City

State Zip

Telephone Number[8][0][3]-[2][6][6]-[7][4][2][3]

1.13 This reporting year is from 01 88 to 12 88
Mo. Year Mo. Year

☐ Mark (X) this box if you attach a continuation sheet.

1.16 For each classification listed below, state the quantity of the listed substance that was manufactured, imported, or processed at your facility during the reporting year.

CBI

☐ Classification Quantity (kg/yr)

Manufactured

Imported

Processed (include quantity repackaged) 245,080 kg

Of that quantity manufactured or imported, report that quantity:

In storage at the beginning of the reporting year

For on-site use or processing

For direct commercial distribution (including export)

In storage at the end of the reporting year

Of that quantity processed, report that quantity:

In storage at the beginning of the reporting year 0.0

Processed as a reactant (chemical producer) N/A

Processed as a formulation component (mixture producer) N/A

Processed as an article component (article producer) N/A

Repackaged (including export) 245,080 kg

In storage at the end of the reporting year 0.0

☐ Mark (X) this box if you attach a continuation sheet.

1.17 Mixture -- If the listed substance on which you are required to report is a mixture or a component of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.)

[]

N/A

Total	100%
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10

2.04 State the quantity of the listed substance that your facility manufactured, imported, or processed during the 3 corporate fiscal years preceding the reporting year in descending order.

CBI

☐ Year ending [7]2 [8]7
Mo. Year

Quantity manufactured kg

Quantity imported kg

Quantity processed 286,027 kg

Year ending [7]2 [8]6
Mo. Year

Quantity manufactured kg

Quantity imported kg

Quantity processed 247,409 kg

Year ending [7]2 [8]5
Mo. Year

Quantity manufactured kg

Quantity imported kg

Quantity processed 258,009 kg

2.05 Specify the manner in which you manufactured the listed substance. Circle all appropriate process types.

CBI

☐ Continuous process 1
N/A ☐ Semicontinuous process 2
☐ Batch process 3

☐ Mark (X) this box if you attach a continuation sheet.

2.06 Specify the manner in which you processed the listed substance. Circle all appropriate process types.

- ☐ Continuous process 1
- ☒ Semicontinuous process 2
- ☐ Batch process 3

2.07 State your facility's name-plate capacity for manufacturing or processing the listed substance. (If you are a batch manufacturer or batch processor, do not answer this question.)

- ☐ Manufacturing capacity kg/yr
- ☐ Processing capacity uk kg/yr

2.08 If you intend to increase or decrease the quantity of the listed substance manufactured, imported, or processed at any time after your current corporate fiscal year, estimate the increase or decrease based upon the reporting year's production volume.

<input type="checkbox"/>	Manufacturing Quantity (kg)	Importing Quantity (kg)	Processing Quantity (kg)
Amount of increase			
Amount of decrease			

*TQI - HAS BEEN REPLACED WITH MDI AS
OF JAN. 1989*

100 % - REDUCTION OF TQI

☐ Mark (X) this box if you attach a continuation sheet.

2.09 For the three largest volume manufacturing or processing process types involving the listed substance, specify the number of days you manufactured or processed the listed substance during the reporting year. Also specify the average number of hours per day each process type was operated. (If only one or two operations are involved, list those.)

CBI

☐

Days/Year Average
Hours/Day

Process Type #1 (The process type involving the largest quantity of the listed substance.)

Manufactured

Processed

250 days - 8 Hrs

Process Type #2 (The process type involving the 2nd largest quantity of the listed substance.)

Manufactured

Processed

Process Type #3 (The process type involving the 3rd largest quantity of the listed substance.)

Manufactured

Processed

2.10 State the maximum daily inventory and average monthly inventory of the listed substance that was stored on-site during the reporting year in the form of a bulk chemical.

CBI

☐

N/A Maximum daily inventory kg
Average monthly inventory kg

☐ Mark (X) this box if you attach a continuation sheet.

- 2.11 Related Product Types -- List any byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of byproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced into the product (e.g., carryover from raw material, reaction product, etc.).

CBI

☐

uk

<u>CAS No.</u>	<u>Chemical Name</u>	<u>Byproduct, Coproduct or Impurity¹</u>	<u>Concentration (%) (specify \pm % precision)</u>	<u>Source of Byproducts, Coproducts, or Impurities</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Use the following codes to designate byproduct, coproduct, or impurity:

B = Byproduct
C = Coproduct
I = Impurity

☐ Mark (X) this box if you attach a continuation sheet.

- 2.12 Existing Product Types -- List all existing product types which you manufactured, imported, or processed using the listed substance during the reporting year. List the quantity of listed substance you use for each product type as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to ☐ the instructions for further explanation and an example.)

CBI

☐

a. Product Types ¹	b. % of Quantity Manufactured, Imported, or Processed	c. % of Quantity Used Captively On-Site	d. Type of End-Users ²
B	100 %	100 %	CS

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

²Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

- 2.13 Expected Product Types -- Identify all product types which you expect to manufacture, import, or process using the listed substance at any time after your current corporate fiscal year. For each use, specify the quantity you expect to manufacture, import, or process for each use as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

a.	b.	c.	d.
Product Types ¹	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users ²
B	100 %	100 %	CS

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

²Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

2.14 Final Product -- Complete the following table for each type of final product manufactured, imported, or processed at your facility that contains the listed substance other than as an impurity.

☐

N/A

a.	b.	c.	d.
Product Type ¹	Final Product's Physical Form ²	Average % Composition of Listed Substance in Final Product	Type of End-Users ³

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

²Use the following codes to designate the final product's physical form:

A = Gas	F2 = Crystalline solid
B = Liquid	F3 = Granules
C = Aqueous solution	F4 = Other solid
D = Paste	G = Gel
E = Slurry	H = Other (specify) _____
F1 = Powder	

³Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

2.15 Circle all applicable modes of transportation used to deliver bulk shipments of the
CBI listed substance to off-site customers.

- ☐ Truck 1
- ☐ Railcar 2
- ☐ Barge, Vessel 3
- ☐ Pipeline 4
- ☐ Plane 5
- ☐ Other (specify) _____ 6

2.16 Customer Use -- Estimate the quantity of the listed substance used by your customers
CBI or prepared by your customers during the reporting year for use under each category
of end use listed (i-iv).

☐

Category of End Use

i. Industrial Products

Chemical or mixture kg/yr

Article kg/yr

ii. Commercial Products

Chemical or mixture kg/yr

Article kg/yr

iii. Consumer Products

Chemical or mixture kg/yr

Article kg/yr

iv. Other

Distribution (excluding export) kg/yr

Export kg/yr

Quantity of substance consumed as reactant kg/yr

Unknown customer uses kg/yr

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 3 PROCESSOR RAW MATERIAL IDENTIFICATION

PART A GENERAL DATA

- 3.01 Specify the quantity purchased and the average price paid for the listed substance for each major source of supply listed. Product trades are treated as purchases.
CBI The average price is the market value of the product that was traded for the listed substance.

☐

<u>Source of Supply</u>	<u>Quantity (kg)</u>	<u>Average Price (\$/kg)</u>
The listed substance was manufactured on-site.	_____	_____
The listed substance was transferred from a different company site.	_____	_____
The listed substance was purchased directly from a manufacturer or importer.	<u>245,080 kg</u>	<u>1.65</u>
The listed substance was purchased from a distributor or repackager.	_____	_____
The listed substance was purchased from a mixture producer.	_____	_____

- 3.02 Circle all applicable modes of transportation used to deliver the listed substance to your facility.

CBI

☐

- Truck ①
- Railcar 2
- Barge, Vessel 3
- Pipeline 4
- Plane 5
- Other (specify) _____ 6

☐ Mark (X) this box if you attach a continuation sheet.

3.03 a. Circle all applicable containers used to transport the listed substance to your facility.
CBI

☐

Bags 1
Boxes 2
Free standing tank cylinders 3
Tank rail cars 4
Hopper cars 5
Tank trucks 6
Hopper trucks 7
Drums 8
Pipeline 9
Other (specify) _____ 10

b. If the listed substance is transported in pressurized tank cylinders, tank rail cars, or tank trucks, state the pressure of the tanks.

N/A

Tank cylinders mmHg
Tank rail cars mmHg
Tank trucks mmHg

☐ Mark (X) this box if you attach a continuation sheet.

PART B RAW MATERIAL IN THE FORM OF A MIXTURE

3.04 If you obtain the listed substance in the form of a mixture, list the trade name(s) of the mixture, the name of its supplier(s) or manufacturer(s), an estimate of the average percent composition by weight of the listed substance in the mixture, and the amount of mixture processed during the reporting year.

CBI

☐

N/A

<u>Trade Name</u>	<u>Supplier or Manufacturer</u>	<u>Average % Composition by Weight (specify \pm % precision)</u>	<u>Amount Processed (kg/yr)</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

PART C RAW MATERIAL VOLUME

3.05 State the quantity of the listed substance used as a raw material during the reporting year in the form of a class I chemical, class II chemical, or polymer, and the percent composition, by weight, of the listed substance.

☐

	Quantity Used (kg/yr)	% Composition by Weight of Listed Sub- stance in Raw Material (specify \pm % precision)
Class I chemical	<u>245,080 kg</u>	<u>100%</u>
	<u> </u>	<u> </u>
	<u> </u>	<u> </u>
Class II chemical	<u> </u>	<u> </u>
	<u> </u>	<u> </u>
	<u> </u>	<u> </u>
Polymer	<u> </u>	<u> </u>
	<u> </u>	<u> </u>
	<u> </u>	<u> </u>

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 4 PHYSICAL/CHEMICAL PROPERTIES

General Instructions:

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

PART A PHYSICAL/CHEMICAL DATA SUMMARY

- 4.01 Specify the percent purity for the three major¹ technical grade(s) of the listed substance as it is manufactured, imported, or processed. Measure the purity of the substance in the final product form for manufacturing activities, at the time you import the substance, or at the point you begin to process the substance.

CBI

☐

	<u>Manufacture</u>	<u>Import</u>	<u>Process</u>
Technical grade #1	<u>460</u> % purity	_____ % purity	_____ % purity
Technical grade #2	_____ % purity	_____ % purity	_____ % purity
Technical grade #3	_____ % purity	_____ % purity	_____ % purity

¹Major = Greatest quantity of listed substance manufactured, imported or processed.

- 4.02 Submit your most recently updated Material Safety Data Sheet (MSDS) for the listed substance, and for every formulation containing the listed substance. If you possess an MSDS that you developed and an MSDS developed by a different source, submit your version. Indicate whether at least one MSDS has been submitted by circling the appropriate response.

Yes 1

No 2

Indicate whether the MSDS was developed by your company or by a different source.

Your company 1

Another source 2

☒ Mark (X) this box if you attach a continuation sheet.

MSDS - Attached

MATERIAL SAFETY DATA SHEET

Dow Chemical U.S.A. Midland, MI 48674 Emergency Phone: 517-636-4400

Product Code: 92066

Page: 1

PRODUCT NAME: VORANATE (R) 3071 ISOCYANATE - "A" MATERIAL

Effective Date: 12/16/86 Date Printed: 12/20/86

MSDS:001138

001101

1. INGREDIENTS:

Modified undistilled toluene diisocyanate
containing greater than 60% free TDI CAS# 026471-62-5

Substances listed in the Ingredients Section are those identified as being present at a concentration of 1% or greater, or 0.1% if the substance is on the list of potential carcinogens cited in OSHA Hazard Communication Standard. Where proprietary ingredient shows, the identity of this substance may be made available as provided in 29 CFR 1910.1200(I).

2. PHYSICAL DATA:

BOILING POINT: 480F, 249C
VAP PRESS: .04 mmHg @ 75F, 24C
VAP DENSITY: 6.00
SOL. IN WATER: Reacts
SP. GRAVITY: Approx. 1.27 @ 25/4C
APPEARANCE: Clear brown liquid

ODOR: Very sharp, pungent odor.

3. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT: 260F, 127C
METHOD USED: PMCC, ASTM D-93

FLAMMABLE LIMITS

LFL: Not determined
UFL: Not determined

EXTINGUISHING MEDIA: Carbon dioxide, dry chemical, foam, halon 1211. If water is used, it should be in very large quantity. The reaction between water and hot isocyanate may be vigorous.

(Continued on Page 2)

(R) Indicates a trademark of The Dow Chemical Company

MATERIAL SAFETY DATA SHEET

Dow Chemical U.S.A. Midland, MI 48674 Emergency Phone: 517-636-4400

Product Code: 92066

Page: 2

PRODUCT NAME: VORANATE (R) 3071 ISOCYANATE

Effective Date: 12/16/86 Date Printed: 12/20/86

MSDS:001138

3. FIRE AND EXPLOSION HAZARD DATA: (CONTINUED)

FIRE & EXPLOSION HAZARDS: Down-wind personnel must be evacuated. Do not reseal contaminated containers since pressure build-up may cause rupture.

FIRE-FIGHTING EQUIPMENT: People who are fighting isocyanate fires must be protected against nitrogen oxide fumes and isocyanate vapors by wearing positive pressure self-contained breathing apparatus and full protective clothing.

4. REACTIVITY DATA:

STABILITY: (CONDITIONS TO AVOID) Stable when stored under recommended storage conditions. Store in a dry place at temperatures between 15-38C (60-100F).

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Water, acid, base, alcohols, metal compounds, surface active materials. Avoid water as it reacts to form heat, CO₂ and insoluble urea. The combined effect of the CO₂ and heat can produce enough pressure to rupture a closed container.

HAZARDOUS DECOMPOSITION PRODUCTS: Isocyanate vapor and mist, carbon dioxide, carbon monoxide, nitrogen oxides and traces of hydrogen cyanide.

HAZARDOUS POLYMERIZATION: May occur with incompatible reactants, especially strong bases, water or temperatures over 49C (120F).

5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

ACTION TO TAKE FOR SPILLS/LEAKS: Evacuate and ventilate spill area, dike spill to prevent entry into water system, wear full protective equipment including respiratory equipment during clean up.

Major spill: Call Dow Chemical U.S.A. (409) 238-2112. If transportation spill involved call CHEMTREC (800) 424-9300. If temporary control of isocyanate vapor is required a blanket of

(Continued on Page 3)

(R) Indicates a trademark of The Dow Chemical Company

RECEIVED

DEC 29 1986
PURCHASING

PRODUCT NAME: VORANATE (R) 3071 ISOCYANATE

Effective Date: 12/16/86 Date Printed: 12/20/86

MSDS:001138

5. ENVIRONMENTAL AND DISPOSAL INFORMATION: (CONTINUED)

protein foam (available at most fire departments) may be placed over the spill. Large quantities may be pumped into closed but not sealed containers for disposal.

Minor spill: Absorb the isocyanate with sawdust or other absorbent, shovel into suitable unsealed containers, transport to well-ventilated area (outside) and treat with neutralizing solution consisting of a mixture of water and 3-8% concentrated ammonium hydroxide (or 5-10% sodium carbonate). Add about 10 10 parts of neutralizer per part of isocyanate with mixing. Allow to stand for 48 hours letting evolved CO₂ escape.

Clean-up: Decontaminate floor using water/ammonia solution with 1-2% added detergent letting stand over affected area for at least 10 minutes. Cover mops and brooms used for this with plastic and dispose properly (often by incineration).

DISPOSAL METHOD: Follow all federal, state and local regulations. Liquids are usually incinerated in a proper facility. Solids are usually also incinerated or landfilled. Empty drums should be filled with water; let stand for at least 48 hours; drums should be drained, triple rinsed, and holed or crushed to prevent reuse. Dispose of drain and rinse fluid according to local, state, and federal regulations.

6. HEALTH HAZARD DATA:

EYE: May cause pain and severe irritation with corneal injury. In animals, irritation and corneal injury healed within 21 days.

SKIN CONTACT: Prolonged or repeated exposure may cause skin irritation. Skin contact may result in allergic sensitization even though it is not expected to result in absorption of amounts sufficient to cause other adverse effects.

SKIN ABSORPTION: The dermal LD₅₀ has not been determined.

INGESTION: Single dose oral toxicity is low. The oral LD₅₀ for rats is >4000 mg/kg. Ingestion may cause gastrointestinal

(Continued on Page 4)

(R) Indicates a trademark of The Dow Chemical Company

REC-1
FEB 29 1987
DURHAM, NC

MATERIAL SAFETY DATA SHEET

Dow Chemical U.S.A. Midland, MI 48674 Emergency Phone: 517-636-4400

Product Code: 92066

Page: 4

PRODUCT NAME: VORANATE (R) 3071 ISOCYANATE

Effective Date: 12/16/86 Date Printed: 12/20/86

MSDS:001138

6. HEALTH HAZARD DATA: (CONTINUED)

irritation or ulceration.

INHALATION: Excessive vapor concentrations are attainable and could be hazardous on single exposure. Single and repeated excessive exposure may cause severe irritation to upper respiratory tract and lungs (choking sensation, chest tightness), respiratory sensitization, decreased ventilatory capacity, liver effects, cholinesterase depression, gastrointestinal distress and/or neurologic disorders. The 4-hour LC50 for TDI for rats is 13.9 ppm.

SYSTEMIC & OTHER EFFECTS: This mixture contains a component which is listed as a potential carcinogen for hazard communication purposes under OSHA standard 29 CFR 1910.1200 (TDI, listed by NTP and IARC). An oral study in which high doses of TDI were reported to cause cancer in animals has been found to contain numerous deficiencies which compromise the validity of the study. TDI did not cause cancer in laboratory animals exposed by inhalation, the most likely route of exposure. Results of in vitro ("test tube") mutagenicity tests have been inconclusive.

7. FIRST AID:

EYES: Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

SKIN: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician if irritation persists. Wash clothing before reuse. Destroy contaminated shoes.

INGESTION: Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

INHALATION: Remove to fresh air. If not breathing, give mouth-to-mouth resuscitation. If breathing is difficult, give oxygen. Call a physician.

(Continued on Page 5)

(R) Indicates a trademark of The Dow Chemical Company

12/20/86
12/20/86

PRODUCT NAME: VORANATE (R) 3071 ISOCYANATE

Effective Date: 12/16/86 Date Printed: 12/20/86

MSDS:001138

7. FIRST AID: (CONTINUED)

NOTE TO PHYSICIAN: Corrosive. May cause stricture. If lavage is performed, suggest endotracheal and/or esophagoscopy control. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient. The manifestations of the respiratory symptoms, including pulmonary edema, resulting from acute exposure may be delayed. May cause respiratory sensitization. Cholinesterase inhibition has been noted in human exposure but is not of benefit in determining exposure and is not correlated with signs of exposure.

8. HANDLING PRECAUTIONS:

EXPOSURE GUIDELINE(S): OSHA PEL is 0.02 ppm as a ceiling limit for toluene 2,4-diisocyanate. ACGIH TLV is 0.005 ppm; 0.02 ppm STEL for toluene 2,4-diisocyanate. Dow Industrial Hygiene Guide is 0.02 ppm as a ceiling limit for toluene diisocyanate.

VENTILATION: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved supplied-air respirator. For emergency and other conditions where the exposure guideline may be greatly exceeded, use an approved positive-pressure self-contained breathing apparatus.

SKIN PROTECTION: Use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron, or full-body suit will depend on operation. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse. Safety shower should be located in immediate work area.

EYE PROTECTION: Use chemical goggles. If vapor exposure causes eye irritation, use a full-face, supplied-air respirator. Eye wash fountain should be located in immediate work area.

(Continued on Page 6)

(R) Indicates a trademark of The Dow Chemical Company

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MATERIAL SAFETY DATA SHEET

Dow Chemical U.S.A. Midland, MI 48674 Emergency Phone: 517-636-4400

Product Code: 92066

Page: 6

PRODUCT NAME: VORANATE (R) 3071 ISOCYANATE

Effective Date: 12/16/86 Date Printed: 12/20/86

MSDS:001138

9. ADDITIONAL INFORMATION:

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Prevent all contact; warning properties of this material (irritation of eyes, nose, and throat) are not adequate to prevent chronic overexposure from inhalation. This material can produce

asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposure to lower concentrations. Exposures to vapors of heated TDI can be extremely dangerous.

MSDS STATUS: Revised 7 (Notes to Physician).

(R) Indicates a trademark of The Dow Chemical Company
The Information Herein Is Given In Good Faith, But No Warranty, Express Or Implied, Is Made. Consult The Dow Chemical Company For Further Information.

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4.03 Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.

N/A

Yes 1
No 2

4.04 For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

CBI

☐

Activity	Physical State				
	Solid	Slurry	Liquid	Liquified Gas	Gas
Manufacture	1	2	3	4	5
Import	1	2	3	4	5
Process	1	2	3	4	5
Store	1	2	3	4	5
Dispose	1	2	3	4	5
Transport	1	2	3	4	5

☐ Mark (X) this box if you attach a continuation sheet.

4.05 Particle Size -- If the listed substance exists in particulate form during any of the following activities, indicate for each applicable physical state the size and the percentage distribution of the listed substance by activity. Do not include particles ≥ 10 microns in diameter. Measure the physical state and particle sizes for importing and processing activities at the time you import or begin to process the listed substance. Measure the physical state and particle sizes for manufacturing storage, disposal and transport activities using the final state of the product.

CBI

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N/A

<u>Physical State</u>		<u>Manufacture</u>	<u>Import</u>	<u>Process</u>	<u>Store</u>	<u>Dispose</u>	<u>Transport</u>
Dust	<1 micron	_____	_____	_____	_____	_____	_____
	1 to <5 microns	_____	_____	_____	_____	_____	_____
	5 to <10 microns	_____	_____	_____	_____	_____	_____
Powder	<1 micron	_____	_____	_____	_____	_____	_____
	1 to <5 microns	_____	_____	_____	_____	_____	_____
	5 to <10 microns	_____	_____	_____	_____	_____	_____
Fiber	<1 micron	_____	_____	_____	_____	_____	_____
	1 to <5 microns	_____	_____	_____	_____	_____	_____
	5 to <10 microns	_____	_____	_____	_____	_____	_____
Aerosol	<1 micron	_____	_____	_____	_____	_____	_____
	1 to <5 microns	_____	_____	_____	_____	_____	_____
	5 to <10 microns	_____	_____	_____	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 5 ENVIRONMENTAL FATE

PART A RATE CONSTANTS AND TRANSFORMATION PRODUCTS

5.01 Indicate the rate constants for the following transformation processes.

N/A a. Photolysis:

Absorption spectrum coefficient (peak) (1/M cm) at _____ nm

Reaction quantum yield, ϕ at _____ nm

Direct photolysis rate constant, k_p , at ... 1/hr _____ latitude

b. Oxidation constants at 25°C:

For 1O_2 (singlet oxygen), k_{ox} 1/M hr

For RO_2 (peroxy radical), k_{ox} 1/M hr

c. Five-day biochemical oxygen demand, BOD_5 ... mg/l

d. Biotransformation rate constant:

For bacterial transformation in water, k_b ... 1/hr

Specify culture

e. Hydrolysis rate constants:

For base-promoted process, k_B 1/M hr

For acid-promoted process, k_A 1/M hr

For neutral process, k_N 1/hr

f. Chemical reduction rate (specify conditions) _____

g. Other (such as spontaneous degradation) ... _____

☐ Mark (X) this box if you attach a continuation sheet.

PART B PARTITION COEFFICIENTS

5.02 a. Specify the half-life of the listed substance in the following media.

N/A

<u>Media</u>	<u>Half-life (specify units)</u>
Groundwater	_____
Atmosphere	_____
Surface water	_____
Soil	_____

b. Identify the listed substance's known transformation products that have a half-life greater than 24 hours.

<u>CAS No.</u>	<u>Name</u>	<u>Half-life (specify units)</u>	<u>Media</u>
_____	_____	_____	in _____
_____	_____	_____	in _____
_____	_____	_____	in _____
_____	_____	_____	in _____

5.03 Specify the octanol-water partition coefficient, K_{ow} ... _____ at 25°C

N/A Method of calculation or determination _____

5.04 Specify the soil-water partition coefficient, K_d _____ at 25°C

N/A Soil type _____

5.05 Specify the organic carbon-water partition coefficient, K_{oc} _____ at 25°C

5.06 Specify the Henry's Law Constant, H atm-m³/mole

N/A ☐ Mark (X) this box if you attach a continuation sheet.

5.07 List the bioconcentration factor (BCF) of the listed substance, the species for which it was determined, and the type of test used in deriving the BCF.

N/A

Bioconcentration Factor

Species

Test¹

¹Use the following codes to designate the type of test:

F = Flowthrough

S = Static

☐ Mark (X) this box if you attach a continuation sheet.

6.04 For each market listed below, state the quantity sold and the total sales value of the listed substance sold or transferred in bulk during the reporting year.

☐

<u>Market</u>	<u>Quantity Sold or Transferred (kg/yr)</u>	<u>Total Sales Value (\$/yr)</u>
Retail sales		
Distribution -- Wholesalers		
Distribution -- Retailers		
Intra-company transfer		
Repackagers		
Mixture producers		
Article producers		
Other chemical manufacturers or processors		
Exporters		
Other (specify)		

6.05 Substitutes -- List all known commercially feasible substitutes that you know exist for the listed substance and state the cost of each substitute. A commercially feasible substitute is one which is economically and technologically feasible to use in your current operation, and which results in a final product with comparable performance in its end uses.

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☐

<u>Substitute</u>	<u>Cost (\$/kg)</u>
MDI	1.73 Kg

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 7 MANUFACTURING AND PROCESSING INFORMATION

General Instructions:

For questions 7.04-7.06, provide a separate response for each process block flow diagram provided in questions 7.01, 7.02, and 7.03. Identify the process type from which the information is extracted.

PART A MANUFACTURING AND PROCESSING PROCESS TYPE DESCRIPTION

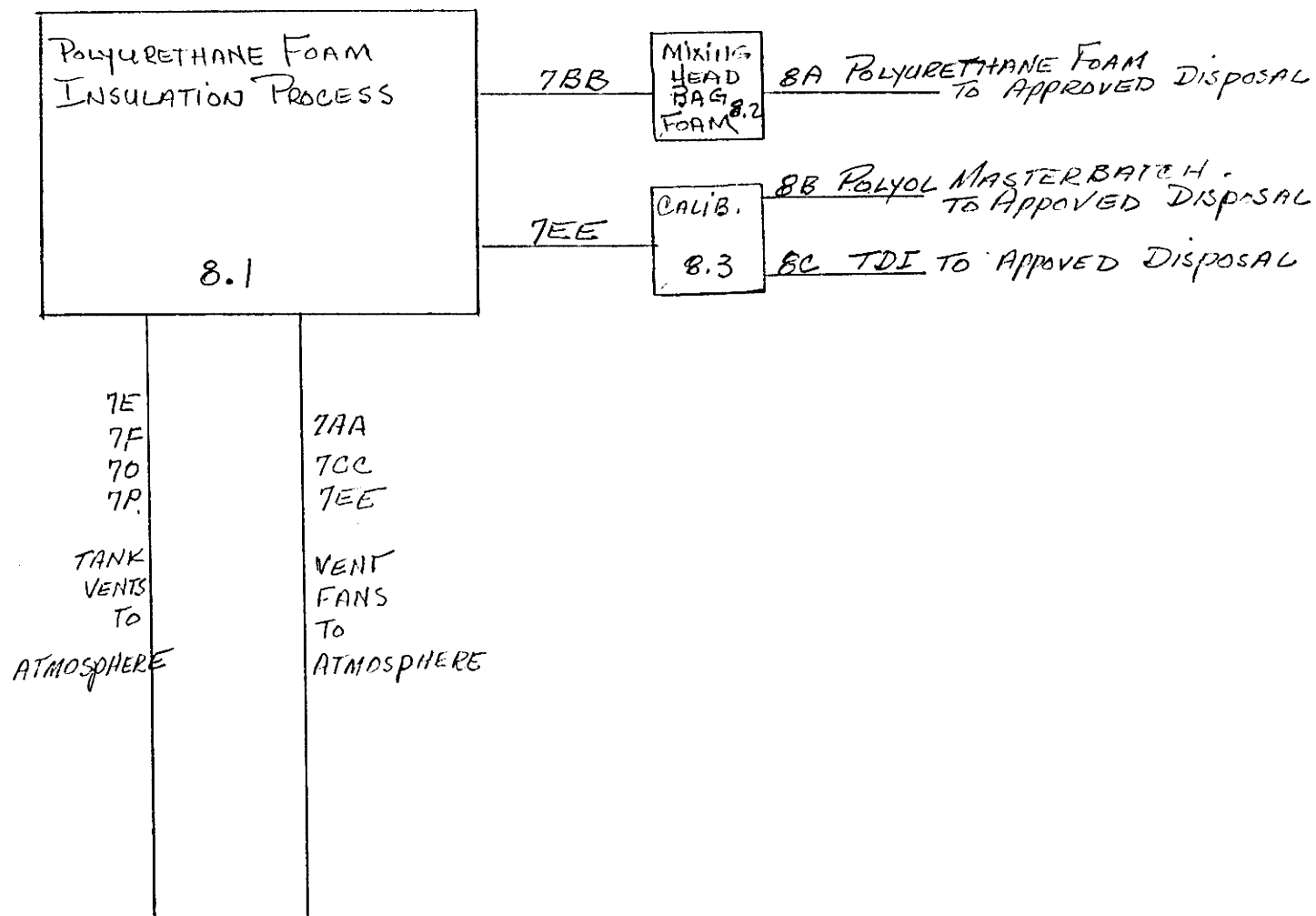
7.01 In accordance with the instructions, provide a process block flow diagram showing the major (greatest volume) process type involving the listed substance.

CBI

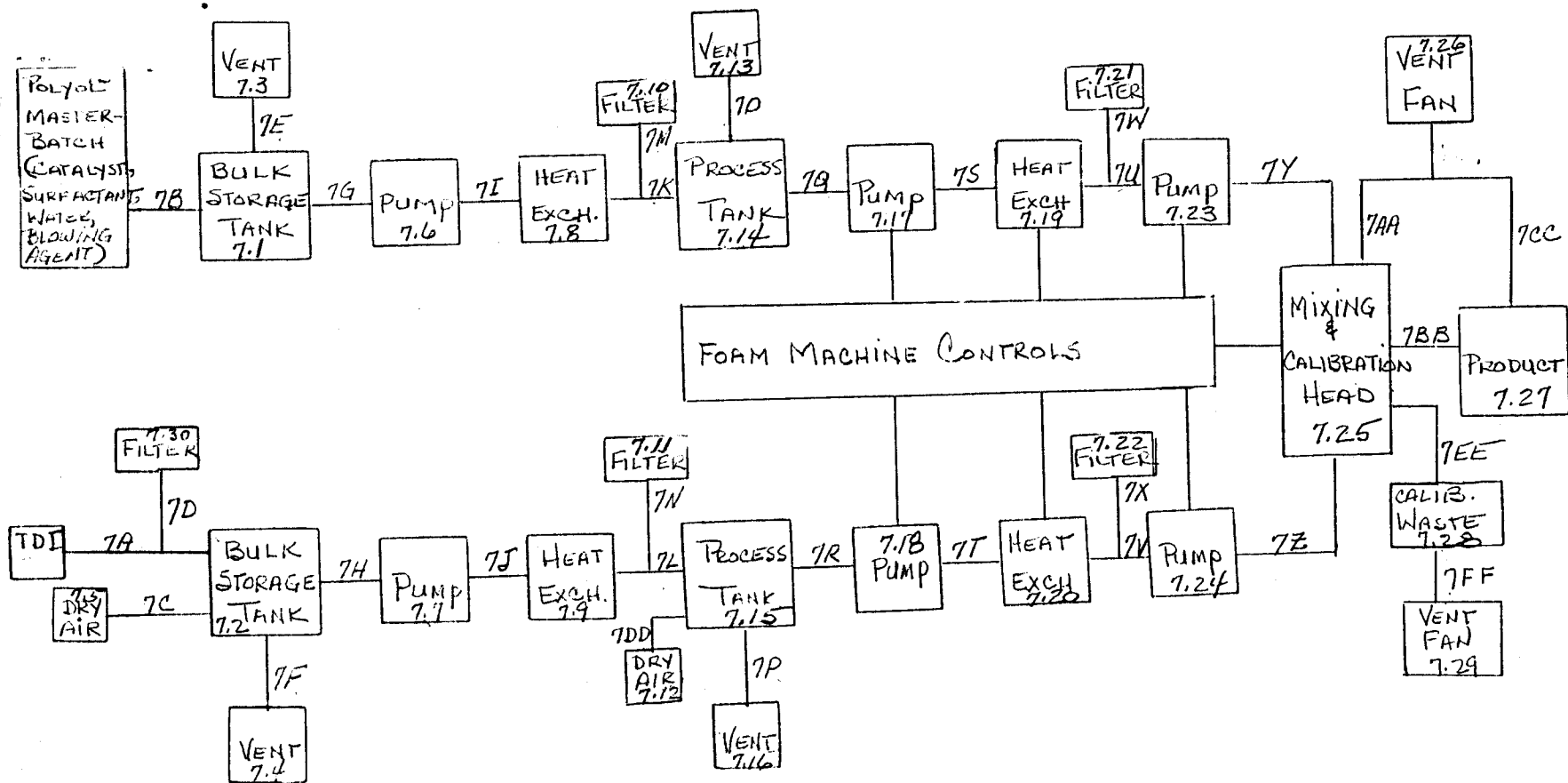
☐ Process type POLYURETHANE FOAM INSULATING PROCESS -
FREEZER CABINETS
(DRAWING ATTACHED)

☐ Mark (X) this box if you attach a continuation sheet.

8.01



7.01



USE SAME DRAWING FOR 7.03

TDI EMISSIONS

- 7.4 TDI BULK STORAGE TANK VENT
- 7.16 TDI PROCESS TANK VENT
- 7.7, 7.18, 7.24 TDI PUMP SEALS
- 7.26, 7.29 TDI MIX HEAD, CALIB. HEAD, CALIB. WASTE VENT FAN
- 7.11, 7.22, 7.30 TDI FILTER

7.03 In accordance with the instructions, provide a process block flow diagram showing all process emission streams and emission points that contain the listed substance and which, if combined, would total at least 90 percent of all facility emissions if not treated before emission into the environment. If all such emissions are released from one process type, provide a process block flow diagram using the instructions for question 7.01. If all such emissions are released from more than one process type, provide a process block flow diagram showing each process type as a separate block.

CBI

☐ Process type POLYURETHANE FOAM INSULATING PROCESS - FREEZER CABINETS

(SEE DRAWING ATTACHED TO 7.01)

☐ Mark (X) this box if you attach a continuation sheet.

7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type POLYURETHANE FOAM INSULATING PROCESS - FREEZER CABINET

Unit Operation ID Number	Typical Equipment Type	Operating Temperature Range (°C)	Operating Pressure Range (mm Hg)	Vessel Composition
<u>7.2</u>	<u>TOI</u> <u>Bulk storage tank</u>	<u>37.8°C</u>	<u>517.144</u>	<u>STEEL</u>
<u>7.7</u>	<u>GEAR Pump</u>	<u>37.8°C</u>	<u>2585.72</u>	<u>STEEL</u>
<u>7.9</u>	<u>HEAT EXCHANGER</u>	<u>37.8°C</u>	<u>2585.72</u>	<u>STEEL</u>
<u>7.15</u>	<u>PROCESS TANK (TOI)</u>	<u>37.8°C</u>	<u>517.144</u>	<u>STEEL</u>
<u>7.18</u>	<u>GEAR Pump</u>	<u>37.8°C</u>	<u>7757.16</u>	<u>STEEL</u>
<u>7.20</u>	<u>HEAT EXCHANGER</u>	<u>37.8°C</u>	<u>7757.16</u>	<u>STEEL</u>
<u>7.24</u>	<u>GEAR Pump</u>	<u>37.8°C</u>	<u>80,157.32</u>	<u>STEEL</u>
<u>7.25</u>	<u>MIXING & CAL. B. HEAD</u>	<u>37.8°C</u>	<u>80,157.32</u>	<u>STEEL</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type

Process Stream ID Code	Process Stream Description	Physical State ¹	Stream Flow (kg/yr)
7A, 7D, 7H, 7J, 7L, 7M, 7R, 7T, 7V, 7X, 7Z	TDI	OL	245,080
7B, 7G, 7I, 7K, 7N, 7S, 7U, 7W, 7Y	Polyol mastenbacht	OL	273,311
7BB	Mixture of TDI & Polyol m.B.	OL	507,561
7E, 7O	Blowing Agent	GU	18
7F, 7P	TDI	GC	9
7AA, 7CC, 7FF	Blowing Agent & TDI	GU	25

¹Use the following codes to designate the physical state for each process stream:

GC = Gas (condensable at ambient temperature and pressure)
 GU = Gas (uncondensable at ambient temperature and pressure)
 SO = Solid
 SY = Sludge or slurry
 AL = Aqueous liquid
 OL = Organic liquid
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

☐ Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

☐ Process type

a.	b.	c.	d.	e.
Process Stream ID Code	Known Compounds ¹	Concentrations ^{2,3} (% or ppm)	Other Expected Compounds	Estimated Concentrations (% or ppm)
7B, 7C, 7E 7K, 7M, 7P, 7S, 7U, 7W, 7Y	POLYOL	69.05%	N/A	N/A
	B-11A-Blowing Agent	28.51%	N/A	N/A
	Poly cat 8 catalyst	1.00%	N/A	N/A
	DBTDL catalyst	0.04%	N/A	N/A
	WATER	0.90%	N/A	N/A
	L-5340 Silicone surfactant	0.50%	N/A	N/A
7A, 7D, 7H 7J, 7L, 7N, 7R, 7T, 7V, 7X, 7Z	TDI	100%	N/A	N/A
7BB	POLYOL MB. & TDI	100%	N/A	N/A

7.06 continued below

SEE 7.01 - CHART

☐ Mark (X) this box if you attach a continuation sheet.

7.06 (continued)

¹For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column b. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

N/A

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
1		
2		
3		
4		
5		

²Use the following codes to designate how the concentration was determined:

A = Analytical result
E = Engineering judgement/calculation

³Use the following codes to designate how the concentration was measured:

V = Volume
W = Weight

☐ Mark (X) this box if you attach a continuation sheet.

PART A RESIDUAL TREATMENT PROCESS DESCRIPTION

8.01 In accordance with the instructions, provide a residual treatment block flow diagram which describes the treatment process used for residuals identified in question 7.01.

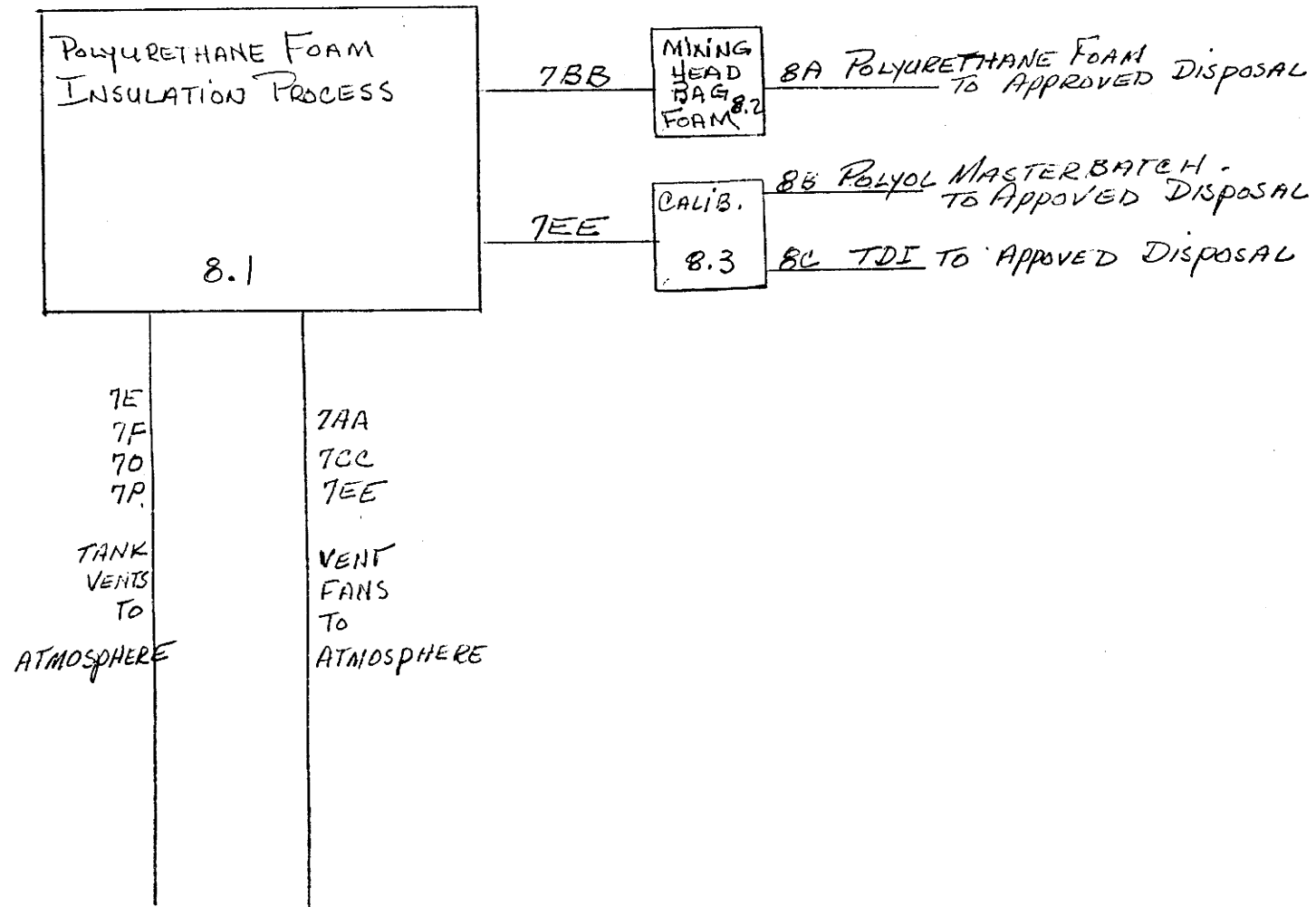
CBI

☐ Process type POLYURETHANE FOAM INSULATION PROCESS

(SEE ATTACHED DRAWING)

☐ Mark (X) this box if you attach a continuation sheet.

8.01



PART B RESIDUAL GENERATION AND CHARACTERIZATION

8.05 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

☐ Process type

a.	b.	c.	d.	e.	f.	g.
Stream ID Code	Type of Hazardous Waste	Physical State of Residual ²	Known Compounds ³	Concentrations (% or ppm) ^{4,5,6}	Other Expected Compounds	Estimated Concentrations (% or ppm)
<u>7E, 7F</u> <u>7Q, 7P</u>	<u>T</u>	<u>GU</u>	<u>R-11-Freon</u>	<u>29.0%</u>	<u>NONE</u>	<u>NA</u>
		<u>GU</u>	<u>CATALYST</u>	<u>1.0%</u>	<u>NONE</u>	<u>NA</u>
		<u>GS</u>	<u>TDI</u>	<u>70.0%</u>	<u>NONE</u>	<u>NA</u>
<u>7AA</u> <u>7CC</u> <u>7EE</u>	<u>T</u>	<u>GU</u>	<u>R-11-Freon</u>	<u>29.0%</u>	<u>NONE</u>	<u>NA</u>
		<u>GU</u>	<u>CATALYST</u>	<u>1.0%</u>	<u>NONE</u>	<u>NA</u>
		<u>GS</u>	<u>TDI</u>	<u>7.0%</u>	<u>NONE</u>	<u>NA</u>
<u>8A</u>	<u>T</u>	<u>GU</u>	<u>R-11-Freon</u>	<u>29.0%</u>	<u>NONE</u>	<u>NA</u>
		<u>GU</u>	<u>CATALYST</u>	<u>1.0%</u>	<u>NONE</u>	<u>NA</u>
		<u>GS</u>	<u>TDI</u>	<u>70.0%</u>	<u>NONE</u>	<u>NA</u>
<u>8B</u>	<u>T</u>	<u>OL</u>	<u>R-11-Freon</u>	<u>96.5%</u>	<u>NONE</u>	<u>NA</u>
		<u>OL</u>	<u>CATALYST</u>	<u>3.5%</u>	<u>NONE</u>	<u>NA</u>
<u>8C</u>	<u>T</u>	<u>OL</u>	<u>TDI</u>	<u>100%</u>	<u>NONE</u>	<u>NA</u>

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

¹Use the following codes to designate the type of hazardous waste:

I = Ignitable
C = Corrosive
R = Reactive
E = EP toxic
T = Toxic
H = Acutely hazardous

²Use the following codes to designate the physical state of the residual:

GC = Gas (condensable at ambient temperature and pressure)
GU = Gas (uncondensable at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

N/A

³For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column d. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
<u>1</u>		
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		

⁴Use the following codes to designate how the concentration was determined:

A = Analytical result

E = Engineering judgement/calculation

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

N/A

⁵Use the following codes to designate how the concentration was measured:

V = Volume

W = Weight

⁶Specify the analytical test methods used and their detection limits in the table below. Assign a code to each test method used and list those codes in column e.

<u>Code</u>	<u>Method</u>	<u>Detection Limit</u> <u>(± ug/l)</u>
<u>1</u>	<hr/>	<hr/>
<u>2</u>	<hr/>	<hr/>
<u>3</u>	<hr/>	<hr/>
<u>4</u>	<hr/>	<hr/>
<u>5</u>	<hr/>	<hr/>
<u>6</u>	<hr/>	<hr/>

☐ Mark (X) this box if you attach a continuation sheet.

8.06 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

☐ Process type POLYURETHANE FOAM INSULATION PROCESS

a.	b.	c.	d.	e.	f.	g.
Stream ID Code	Waste Description Code ¹	Management Method Code ²	Residual Quantities (kg/yr)	Management of Residual (%) On-Site Off-Site	Costs for Off-Site Management (per kg)	Changes in Management Methods
<u>7E, 7F</u>	<u>A01</u>	<u>MSA</u>	<u>18</u>	<u>100%</u>	<u>NA</u>	<u>NONE</u>
<u>70, 7R</u>	<u>B91</u>	<u>MSA</u>	<u>9</u>	<u>100%</u>	<u>NA</u>	<u>NONE</u>
<u>7AA, 7CC</u> <u>7FF</u>	<u>B91</u>	<u>MSA</u>	<u>27</u>	<u>100%</u>	<u>NA</u>	<u>NONE</u>
<u>8A</u>	<u>B82</u>	<u>1D</u>	<u>626</u>	<u>100%</u>	<u>.39</u>	<u>NONE</u>

¹Use the codes provided in Exhibit 8-1 to designate the waste descriptions

²Use the codes provided in Exhibit 8-2 to designate the management methods

☒ Mark (X) this box if you attach a continuation sheet.

^a STREAM ID CODE	^b Waste Description Code ¹	^c Management Method Code ²	^d Residual Quantities (kg/yr)	^e Management of Residual (%)		^f Costs for Off-Site Management (per kg)	^g Changes in Management Methods
				On-Site	Off-Site		
<u>8B</u>	<u>B69</u>	<u>BSR</u>	<u>273</u>	—	<u>100%</u>	<u>NA</u>	<u>NONE</u>
		—	—	—	—	—	—
		—	—	—	—	—	—
					<u>100%</u>	<u>NA</u>	<u>NONE</u>
<u>8C</u>	<u>B69</u>	<u>BSR</u>	<u>245</u>	—	—	—	—
		—	—	—	—	—	—
		—	—	—	—	—	—

8.06 continued

Page 58

8.22 Describe the combustion chamber design parameters for each of the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

☐

N/A

Incinerator	Combustion Chamber Temperature (°C)		Location of Temperature Monitor		Residence Time In Combustion Chamber (seconds)	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
1						
2						
3						

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1

No 2

8.23 Complete the following table for the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

☐

N/A

Incinerator	Air Pollution Control Device ¹	Types of Emissions Data Available
1		
2		
3		

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1

No 2

¹Use the following codes to designate the air pollution control device:

S = Scrubber (include type of scrubber in parenthesis)

E = Electrostatic precipitator

O = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

PART A EMPLOYMENT AND POTENTIAL EXPOSURE PROFILE

9.01 Mark (X) the appropriate column to indicate whether your company maintains records on the following data elements for hourly and salaried workers. Specify for each data element the year in which you began maintaining records and the number of years the records for that data element are maintained. (Refer to the instructions for further explanation and an example.)

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☐

Data Element	Data are Maintained for:		Year in Which Data Collection Began	Number of Years Records Are Maintained
	Hourly Workers	Salaried Workers		
Date of hire	<u>X</u>	<u>X</u>	<u>1966</u>	<u>20</u>
Age at hire	<u>X</u>	<u>X</u>	<u>1966</u>	<u>20</u>
Work history of individual before employment at your facility	<u>X</u>	<u>X</u>	<u>1966</u>	<u>20</u>
Sex	<u>X</u>	<u>X</u>	<u>1966</u>	<u>20</u>
Race	<u>X</u>	<u>X</u>	<u>1966</u>	<u>20</u>
Job titles	<u>X</u>	<u>X</u>	<u>1966</u>	<u>20</u>
Start date for each job title	<u>X</u>	<u>X</u>	<u>1966</u>	<u>20</u>
End date for each job title	<u>X</u>	<u>X</u>	<u>1966</u>	<u>20</u>
Work area industrial hygiene monitoring data	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Personal employee monitoring data	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Employee medical history	<u>X</u>	<u>X</u>	<u>1966</u>	<u>FOREVER</u>
Employee smoking history	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Accident history	<u>X</u>	<u>X</u>	<u>1966</u>	<u>20</u>
Retirement date	<u>X</u>	<u>X</u>	<u>1979</u>	<u>20</u>
Termination date	<u>X</u>	<u>X</u>	<u>1966</u>	<u>20</u>
Vital status of retirees	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Cause of death data	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>

☐ Mark (X) this box if you attach a continuation sheet.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

☐

a.	b.	c.	d.	e.
<u>Activity</u>	<u>Process Category</u>	<u>Yearly Quantity (kg)</u>	<u>Total Workers</u>	<u>Total Worker-Hours</u>
Manufacture of the listed substance	Enclosed	_____	_____	_____
	Controlled Release	_____	_____	_____
	Open	_____	_____	_____
On-site use as reactant	Enclosed	_____	_____	_____
	Controlled Release	_____	_____	_____
	Open	_____	_____	_____
On-site use as nonreactant	Enclosed	_____	_____	_____
	Controlled Release	_____	_____	_____
	Open	_____	_____	_____
On-site preparation of products	Enclosed	_____	_____	_____
	Controlled Release	_____	_____	_____
	Open	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

9.03 Provide a descriptive job title for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance.

CBI

☐

Labor Category

Descriptive Job Title

A

FOAM TECHNICIAN

B

FOAM OPERATOR

C

FOREMAN

D

PROCESS ENGINEER

E

F

G

H

I

J

☐ Mark (X) this box if you attach a continuation sheet.

9.04 In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.

CBI

☐ Process type POLYURETHANE FOAM INSULATION PROCESS

(USE DRAWING 7.01)

☐ Mark (X) this box if you attach a continuation sheet.

9.05 Describe the various work area(s) shown in question 9.04 that encompass workers who may potentially come in contact with or be exposed to the listed substance. Add any additional areas not shown in the process block flow diagram in question 7.01 or 7.02. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type POLYURETHANE FOAM INSULATING PROCESS

Work Area ID

Description of Work Areas and Worker Activities

1	<u>UNLOADING DOCK (WORKERS UNLOAD TANKER INTO</u>
2	<u>BULK STORAGE) BULK STORAGE AREA (WORKER'S</u>
3	<u>MONITORS TEMP. & PRESSURE) FOAM MACHINES</u>
4	<u>WORKERS CALIB. & MONITOR OPERATIONS OF</u>
5	<u>FILLING FREEZER CABINETS.</u>
6	
7	
8	
9	
10	

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type POLYURETHANE FOAM INSULATING PROCESS

Work area

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
<u>1</u>	<u>1</u>	<u>VAPOR</u>	<u>Gu</u>	<u>B</u>	<u>20</u>
<u>2</u>	<u>2</u>	<u>VAPOR</u>	<u>Gu</u>	<u>B</u>	<u>230</u>
<u>3</u>	<u>6</u>	<u>VAPOR & Liquid</u>	<u>Gu & OL</u>	<u>F</u>	<u>230</u>

¹Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)
 GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)
 SO = Solid

SY = Sludge or slurry
 AL = Aqueous liquid
 OL = Organic liquid
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

²Use the following codes to designate average length of exposure per day:

A = 15 minutes or less
 B = Greater than 15 minutes, but not exceeding 1 hour
 C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours
 E = Greater than 4 hours, but not exceeding 8 hours
 F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

uk

9.07 For each labor category represented in question 9.06, indicate the 8-hour Time Weighted Average (TWA) exposure levels and the 15-minute peak exposure levels. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type

Work area

<u>Labor Category</u>	<u>8-hour TWA Exposure Level (ppm, mg/m³, other-specify)</u>	<u>15-Minute Peak Exposure Level (ppm, mg/m³, other-specify)</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

PART B WORK PLACE MONITORING PROGRAM

9.08 If you monitor worker exposure to the listed substance, complete the following table.

CBI

☐

N/A

<u>Sample/Test</u>	<u>Work Area ID</u>	<u>Testing Frequency (per year)</u>	<u>Number of Samples (per test)</u>	<u>Who Samples¹</u>	<u>Analyzed In-House (Y/N)</u>	<u>Number of Years Records Maintained</u>
Personal breathing zone						
General work area (air)						
Wipe samples						
Adhesive patches						
Blood samples						
Urine samples						
Respiratory samples						
Allergy tests						
Other (specify)						
Other (specify)						
Other (specify)						

¹Use the following codes to designate who takes the monitoring samples:

A = Plant industrial hygienist

B = Insurance carrier

C = OSHA consultant

D = Other (specify) _____

DOW CHEMICAL

☐ Mark (X) this box if you attach a continuation sheet.

9.09 For each sample type identified in question 9.08, describe the type of sampling and analytical methodology used for each type of sample.

☐ Sample Type Sampling and Analytical Methodology

N/A

9.10 If you conduct personal and/or ambient air monitoring for the listed substance, specify the following information for each equipment type used.

CBI

☐ Equipment Type¹ Detection Limit² Manufacturer Averaging Time (hr) Model Number

N/A

¹Use the following codes to designate personal air monitoring equipment types:

- A = Passive dosimeter
- B = Detector tube
- C = Charcoal filtration tube with pump
- D = Other (specify) _____

Use the following codes to designate ambient air monitoring equipment types:

- E = Stationary monitors located within work area
- F = Stationary monitors located within facility
- G = Stationary monitors located at plant boundary
- H = Mobile monitoring equipment (specify) _____
- I = Other (specify) _____

²Use the following codes to designate detection limit units:

- A = ppm
- B = Fibers/cubic centimeter (f/cc)
- C = Micrograms/cubic meter (μ/m^3)

☐ Mark (X) this box if you attach a continuation sheet.

9.11 If you conduct routine medical tests for monitoring the health effects of exposure to the listed substance, specify the type and frequency of the tests.

CBI

☐

Test Description

Frequency
(weekly, monthly, yearly, etc.)

X-RAY

YEARLY

PULMONARY SCAN

YEARLY

☐ Mark (X) this box if you attach a continuation sheet.

PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type POLYURETHANE FOAM INSULATING PROCESS
Work area FOAM AREA

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	<u>Y</u>	<u>1977</u>	<u>Y</u>	<u>1987</u>
General dilution	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Other (specify) _____	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Vessel emission controls	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Mechanical loading or packaging equipment	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Other (specify) _____	<u> </u>	<u> </u>	<u> </u>	<u> </u>

☐ Mark (X) this box if you attach a continuation sheet.

- 9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type POLYURETHANE FOAM INSULATING PROCESS
Work area FOAM MACHINES

Equipment or Process Modification	Reduction in Worker Exposure Per Year (%)
<u>ENCLOSURE AROUND FOAM MACHINES</u>	<u>UK</u>
<u>IMPROVED VENTING SYSTEM</u>	<u>UK</u>

☐ Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type POLYURETHANE FOAM INSULATING PROCESS
Work area FOAM MACHINES

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>Y</u>
Safety goggles/glasses	<u>Y</u>
Face shields	<u>Y</u>
Coveralls	<u>Y</u>
Bib aprons	<u>Y</u>
Chemical-resistant gloves	<u>Y</u>
Other (specify)	
_____	_____
_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

9.15 If workers use respirators when working with the listed substance, specify for each process type, the work areas where the respirators are used, the type of respirators used, the average usage, whether or not the respirators were fit tested, and the type and frequency of the fit tests. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type _____

Work Area	Respirator Type	Average Usage ¹	Fit Tested (Y/N)	Type of Fit Test ²	Frequency of Fit Tests (per year)
1	FULL FACE - CARTRIDGE	B	Y	QL	B
2	" " "	B	Y	QL	B
3	" " "	B	Y	QL	B

¹Use the following codes to designate average usage:

A = Daily
 B = Weekly
 C = Monthly
 D = Once a year
 E = Other (specify) _____

²Use the following codes to designate the type of fit test:

QL = Qualitative
 QT = Quantitative

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

☐

Process type POLYURETHANE FOAM INSULATING PROCESS
Work area FOAM MACHINES

Respiratory Protection
Training Program
Venting

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type POLYURETHANE FOAM INSULATING PROCESS
Work area FOAM MACHINES

Housekeeping Tasks	Less Than Once Per Day	1-2 Times Per Day	3-4 Times Per Day	More Than 4 Times Per Day
Sweeping		<u>X</u>		
Vacuuming		<u>NA</u>		
Water flushing of floors		<u>NA</u>		
Other (specify)		<u>NA</u>		

☐ Mark (X) this box if you attach a continuation sheet.

9.21 Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?

N/A

Routine exposure

Yes 1

No 2

Emergency exposure

Yes 1

No 2

If yes, where are copies of the plan maintained?

Routine exposure: _____

Emergency exposure: _____

9.22 Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.

☒ Yes 1

No 2

If yes, where are copies of the plan maintained? _____

Has this plan been coordinated with state or local government response organizations?
Circle the appropriate response.

Yes 1

No 2

9.23 Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.

N/A

Plant safety specialist 1

Insurance carrier 2

OSHA consultant 3

Other (specify) _____ 4

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 10 ENVIRONMENTAL RELEASE

General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and, thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RQ.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23. Photocopy these questions and complete them separately for each release.

PART A GENERAL INFORMATION

10.01 Where is your facility located? Circle all appropriate responses.

CBI

- ☐ Industrial area 1
- ☒ Urban area 2
- Residential area 3
- Agricultural area 4
- Rural area 5
- Adjacent to a park or a recreational area 6
- Within 1 mile of a navigable waterway 7
- ☒ Within 1 mile of a school, university, hospital, or nursing home facility 8
- Within 1 mile of a non-navigable waterway 9
- Other (specify) _____ 10

☐ Mark (X) this box if you attach a continuation sheet.

10.02 Specify the exact location of your facility (from central point where process unit is located) in terms of latitude and longitude or Universal Transverse Mercader (UTM) coordinates.

Latitude 81 ° 25 ' W "

Longitude 33 ° 24 ' N "

UTM coordinates Zone _____, Northing _____, Easting _____

10.03 If you monitor meteorological conditions in the vicinity of your facility, provide the following information.

NA Average annual precipitation inches/year

Predominant wind direction

10.04 Indicate the depth to groundwater below your facility.

NA Depth to groundwater meters

10.05 For each on-site activity listed, indicate (Y/N/NA) all routine releases of the listed substance to the environment. (Refer to the instructions for a definition of Y, N, and NA.)

CBI

☐

Environmental Release

On-Site Activity

Air

Water

Land

Manufacturing

NA

NA

NA

Importing

NA

NA

NA

Processing

Y

N

N

Otherwise used

NA

NA

NA

Product or residual storage

Y

N

N

Disposal

NA

NA

NA

Transport

NA

NA

NA

☐ Mark (X) this box if you attach a continuation sheet.

10.06 Provide the following information for the listed substance and specify the level of precision for each item. (Refer to the instructions for further explanation and an example.)

CBI

☐

Quantity discharged to the air 25 kg/yr \pm 0.00%

Quantity discharged in wastewaters NONE kg/yr \pm ____ %

Quantity managed as other waste in on-site treatment, storage, or disposal units NONE kg/yr \pm ____ %

Quantity managed as other waste in off-site treatment, storage, or disposal units NONE kg/yr \pm ____ %

☐ Mark (X) this box if you attach a continuation sheet.

10.08 Describe the control technologies used to minimize release of the listed substance for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI

☐

Process type POLYURETHANE FOAM INSULATING PROCESS

<u>Stream ID Code</u>	<u>Control Technology</u>	<u>Percent Efficiency</u>
<u>7E, 7F, 7O, 7P</u>	<u>NONE</u>	<u>N/A</u>

☐ Mark (X) this box if you attach a continuation sheet.

PART B RELEASE TO AIR

- 10.09 Point Source Emissions -- Identify each emission point source containing the listed substance in terms of a Stream ID Code as identified in your process block or residual treatment block flow diagram(s), and provide a description of each point source. Do not include raw material and product storage vents, or fugitive emission sources (e.g., equipment leaks). Photocopy this question and complete it separately for each process type.

Process type POLYURETHANE FOAM INSULATING PROCESS

Point Source
ID Code

Description of Emission Point Source

7E, 7F, 7G, 7P

VENTS

7AA, 7CC, 7FE

VENT FAN, MIX HEAD, REACTION ZONE
CALIB. HEAD

☐ Mark (X) this box if you attach a continuation sheet.

☐ Mark (X) this box if you attach a continuation sheet.

10.10 Emission Characteristics -- Characterize the emissions for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

☐

Point Source ID Code	Physical State ¹	Average Emissions (kg/day)	Frequency ² (days/yr)	Duration ³ (min/day)	Average Emission Factor ⁴	Maximum Emission Rate (kg/min)	Maximum Emission Rate Frequency (events/yr)	Maximum Emission Rate Duration (min/event)
7E	V	UK	UK	UK	UK	UK	UK	UK
7F	V	UK	"	"	"	"	"	"
7O	V	UK	"	"	"	"	"	"
7P	V	UK	"	"	"	"	"	"
7AA	V	UK	"	"	"	"	"	"
7CC	V	UK	"	"	"	"	"	"
7EE	V	UK	"	"	"	"	"	"

¹Use the following codes to designate physical state at the point of release:

G = Gas; V = Vapor; P = Particulate; A = Aerosol; O = Other (specify) _____

²Frequency of emission at any level of emission

³Duration of emission at any level of emission

⁴Average Emission Factor -- Provide estimated (\pm 25 percent) emission factor (kg of emission per kg of production of listed substance)

10.11 Stack Parameters -- Identify the stack parameters for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

☐

uk

Point Source ID Code	Stack Height(m)	Stack Inner Diameter (at outlet) (m)	Exhaust Temperature (°C)	Emission Exit Velocity (m/sec)	Building Height(m) ¹	Building Width(m) ²	Vent Type ³

¹Height of attached or adjacent building

²Width of attached or adjacent building

³Use the following codes to designate vent type:

H = Horizontal

V = Vertical

☐ Mark (X) this box if you attach a continuation sheet.

10.12 If the listed substance is emitted in particulate form, indicate the particle size distribution for each Point Source ID Code identified in question 10.09. Photocopy this question and complete it separately for each emission point source.

CBI

☐

Point source ID code

N/A

Size Range (microns)

Mass Fraction (% ± % precision)

< 1

≥ 1 to < 10

≥ 10 to < 30

≥ 30 to < 50

≥ 50 to < 100

≥ 100 to < 500

≥ 500

Total = 100%

☐ Mark (X) this box if you attach a continuation sheet.

PART C FUGITIVE EMISSIONS

10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type POLYURETHANE FOAM INSULATING PROCESS
 Percentage of time per year that the listed substance is exposed to this process type %

u/k

Equipment Type	Number of Components in Service by Weight Percent of Listed Substance in Process Stream					Greater than 99%
	Less than 5%	5-10%	11-25%	26-75%	76-99%	
Pump seals ¹						
Packed						
Mechanical						
Double mechanical ²						
Compressor seals ¹						
Flanges						
Valves						
Gas ³						
Liquid						
Pressure relief devices ⁴ (Gas or vapor only)						
Sample connections						
Gas						
Liquid						
Open-ended lines ⁵ (e.g., purge, vent)						
Gas						
Liquid						

¹List the number of pump and compressor seals, rather than the number of pumps or compressors

10.13 continued on next page

☐ Mark (X) this box if you attach a continuation sheet.

10.13 (continued)

²If double mechanical seals are operated with the barrier (B) fluid at a pressure greater than the pump stuffing box pressure and/or equipped with a sensor (S) that will detect failure of the seal system, the barrier fluid system, or both, indicate with a "B" and/or an "S", respectively

³Conditions existing in the valve during normal operation

⁴Report all pressure relief devices in service, including those equipped with control devices

⁵Lines closed during normal operation that would be used during maintenance operations

10.14 Pressure Relief Devices with Controls -- Complete the following table for those pressure relief devices identified in 10.13 to indicate which pressure relief devices in service are controlled. If a pressure relief device is not controlled, enter "None" under column c.

CBI

☐

ak

a. Number of Pressure Relief Devices	b. Percent Chemical in Vessel ¹	c. Control Device	d. Estimated Control Efficiency ²
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

¹Refer to the table in question 10.13 and record the percent range given under the heading entitled "Number of Components in Service by Weight Percent of Listed Substance" (e.g., <5%, 5-10%, 11-25%, etc.)

²The EPA assigns a control efficiency of 100 percent for equipment leaks controlled with rupture discs under normal operating conditions. The EPA assigns a control efficiency of 98 percent for emissions routed to a flare under normal operating conditions

☐ Mark (X) this box if you attach a continuation sheet.

10.15 Equipment Leak Detection -- If a formal leak detection and repair program is in place, complete the following table regarding those leak detection and repair procedures. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type

NA

Equipment Type	Leak Detection	Detection Device ¹	Frequency of Leak Detection (per year)	Repairs Initiated (days after detection)	Repairs Completed (days after initiated)
	Concentration (ppm or mg/m ³) Measured at _____ Inches from Source				
Pump seals					
Packed					
Mechanical					
Double mechanical					
Compressor seals					
Flanges					
Valves					
Gas					
Liquid					
Pressure relief devices (gas or vapor only)					
Sample connections					
Gas					
Liquid					
Open-ended lines					
Gas					
Liquid					

¹Use the following codes to designate detection device:

POVA = Portable organic vapor analyzer

FPM = Fixed point monitoring

0 = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

☐ Mark (X) this box if you attach a continuation sheet.

10.16 Raw Material, Intermediate and Product Storage Emissions - - Complete the following table by providing the information on each liquid raw material, intermediate, and product storage vessel containing the listed substance as identified in your process block or residual treatment block flow diagram(s).

CBI



Vessel Type ¹	Floating Roof Seals ²	Composition of Stored Materials ³	Throughput (liters per year)	Vessel Filling Rate (gpm)	Vessel Filling Duration (min)	Vessel Inner Diameter (m)	Vessel Height (m)	Vessel Volume (l)	Operating Vessel Emission Controls ⁴	Design Flow Rate ⁵	Vent Diameter (cm)	Control Efficiency (%)	Basis for Estimate ⁶
(150SI)	NA	UK	194,786	UK	120	2.44	5.34	18,927	Pop-off Valve	UK	254	95%	C

¹Use the following codes to designate vessel type:

F = Fixed roof
 CIF = Contact internal floating roof
 NCIF = Noncontact internal floating roof
 EFR = External floating roof
 P = Pressure vessel (indicate pressure rating)
 H = Horizontal
 U = Underground

²Use the following codes to designate floating roof seals:

MS1 = Mechanical shoe, primary
 MS2 = Shoe-mounted secondary
 MS2R = Rim-mounted, secondary
 LM1 = Liquid-mounted resilient filled seal, primary
 LM2 = Rim-mounted shield
 LMW = Weather shield
 VM1 = Vapor mounted resilient filled seal, primary
 VM2 = Rim-mounted secondary
 VMW = Weather shield

³Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

⁴Other than floating roofs

⁵Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

⁶Use the following codes to designate basis for estimate of control efficiency:

C = Calculations
 S = Sampling

PART E NON-ROUTINE RELEASES

10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

<u>Release</u>	<u>Date Started</u>	<u>Time (am/pm)</u>	<u>Date Stopped</u>	<u>Time (am/pm)</u>
1	<u>NONE</u>	<u> </u>	<u> </u>	<u> </u>
2	<u> </u>	<u> </u>	<u> </u>	<u> </u>
3	<u> </u>	<u> </u>	<u> </u>	<u> </u>
4	<u> </u>	<u> </u>	<u> </u>	<u> </u>
5	<u> </u>	<u> </u>	<u> </u>	<u> </u>
6	<u> </u>	<u> </u>	<u> </u>	<u> </u>

10.24 Specify the weather conditions at the time of each release.

N/A

<u>Release</u>	<u>Wind Speed (km/hr)</u>	<u>Wind Direction</u>	<u>Humidity (%)</u>	<u>Temperature (°C)</u>	<u>Precipitation (Y/N)</u>
1	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
2	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
3	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
4	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
5	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
6	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

☐ Mark (X) this box if you attach a continuation sheet.